



## Climate change and human skin cancer

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### Abstract:

As part of an inventory of potential interactions between effects of ozone depletion and climate change, a possible effect of ambient temperature on sun-induced skin cancers was suggested. Mouse experiments had shown that increased room temperature enhanced ultraviolet (UV) radiation-induced carcinogenesis; the effective UV dose was increased by 3-7% per °C. The present investigation was aimed at studying a possible temperature effect on human skin cancer. Existing data on the incidence of human skin cancer were analyzed, as available from two special surveys of non-melanoma skin cancer in the United States. The incidence of non-melanoma skin cancer in the ten regions surveyed not only correlated significantly with the ambient UV dose but also with the average daily maximum temperature in summer. For squamous cell carcinoma the incidence was higher by 5.5% (SE 1.6%) per °C and for basal cell carcinoma by 2.9% (SE 1.4%) per °C. These values correspond to an increase of the effective UV dose by about 2% per °C. Although the precise nature of this correlation with temperature requires further studies, it can be concluded that the temperature rises coming with climate change can indeed amplify the induction of non-melanoma skin cancers by UV radiation in human populations. © The Royal Society of Chemistry and Owner Societies.

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### Resource Description

#### Exposure :

weather or climate related pathway by which climate change affects health

Solar Radiation, Temperature

#### Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

#### Geographic Location:

resource focuses on specific location

United States

# Climate Change and Human Health Literature Portal

## **Health Impact:**

specification of health effect or disease related to climate change exposure

Cancer

## **Mitigation/Adaptation:**

mitigation or adaptation strategy is a focus of resource

Adaptation

## **Resource Type:**

format or standard characteristic of resource

Research Article

## **Timescale:**

time period studied

Time Scale Unspecified

## **Vulnerability/Impact Assessment:**

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content